1

THE HONORABLE JAMES L. ROBART

2

3

4

5

6

7

8   UNITED STATES DISTRICT COURT
                     FOR THE WESTERN DISTRICT OF WASHINGTON
9   AT SEATTLE

10   ELAINE FOSMIRE,

11   NO. 3:10-CV-05291 JLR
                            Plaintiff,
12   ***EXECUTED*** DECLARATION OF NYAK L.
     vs.   POLISSAR, PH.D. IN OPPOSITION TO
13   DEFENDANTS' MOTION TO EXCLUDE
     PROGRESSIVE MAX INSURANCE   EXPERT REPORT
14   COMPANY; PROGRESSIVE CASUALTY
     INSURANCE COMPANY; PROGRESSIVE   NOTE ON MOTION CALENDAR:
15   DIRECT INSURANCE CO.; PROGRESSIVE   April 22, 2011
     CORPORATION,
16
                            Defendants.
17

18

19

20

21

22

23

24

25

26

27   EXECUTED DECLARATION OF NYAK L.
     POLISSAR, PH.D. IN OPPOSION TO DEFENDANT'S
     MOTION TO EXCLUDE EXPERT REPORT
28   Law Offices of
                                                   STEPHEN M. HANSEN, P.S.
                                                       1703A DOCK STREET
                                                   TACOMA, WASHINGTON 98402
                                                         (253) 302-5955
                                                        (253) 301-1147 Fax

IN THE UNITED STATES DISTRICT COURT

IN AND FOR THE WESTERN DISTRICT OF WASHINGTON

AT SEATTLE

ELAINE FOSMIRE, Plaintiff, vs. PROGRESSIVE MAX INSURANCE COMPANY; PROGRESSIVE CASUALTY INSURANCE COMPANY; PROGRESSIVE DIRECT INSURANCE CO.; PROGRESSIVE CORPORATION, Defendants.	Case No.: 3:10-cv-05291-JLR **DECLARATION OF NAYAK L. POLISSAR, PH.D. IN OPPOSITION TO DEFENDANT'S MOTION TO EXCLUDE EXPERT REPORT** NOTE ON MOTION CALENDAR: April 22, 2011

I, Nayak L. Polissar, Ph.D., declare under penalty of perjury as follows:

1.   I am responding to the "Defendant's Motion to Exclude" ("Motion") in the above-captioned action, filed April 5, 2011. I am responding to statistical issues. As I have described my credentials elsewhere in previous documents on this case, I will not repeat them here. I have reviewed the Motion carefully and find that the points raised by the

Defendant are based either on an apparent misunderstanding or on an incomplete representation of the facts of the case. Below I have responded to the Motion's items point by point.

2.   Progressive's argument attempts to establish a bar for acceptance that has, in fact, already been reached on multiple occasions. Both the dataset, which I am using to develop my analysis, as well as previous statistical modeling based on that dataset, have been accepted by multiple courts, including:

- Busani v. United States Automobile Association, No. 99-2-08217-1 (Pierce Cty, Wash. Sup. Crt., 1999)

- Laughlin et al. v. Allstate et al., No. 02-2-10380-0 (Pierce Cty, Wash. Sup. Crt. 2004)

- Moeller v. Farmers Insurance Co., No. 99-2-07850-6 (Pierce Cty, Wash. Sup. Crt. 2002)

- Farris v. SAFECO Insurance Company of America, et al., No. 00C15760 (Circuit Court of the State of Oregon, Marion County)

- Sims v. Allstate, No. 99-L-393-A, Circuit Court for the 20th Judicial Circuit, St. Clair County, Illinois

- Peterson v. State Farm, Illinois, No. 99-L-394, Circuit Court for the Judicial Circuit, St. Clair County, Illinois

3.   My methodological plan is as follows: As a methodologic framework, the auto auction represents a sample of transactions where there is a potential impact of damage on sales price. I understand that post-accident diminished value as a phenomenon is well established in the laws of a number of states—laws which provide

relief for diminished value loss. Further, I understand that the existence of diminished value has been accepted previously in class action lawsuits against insurance companies. However, a side product (not the main intent) of our analysis will be a formal test of the existence of diminished value. If there is no effect of damage on price, then there is zero diminished value, and that concept is a "null hypothesis," as follows: there is no relationship between presence vs. absence of damage or extent of damage on price. We expect to reject that null hypothesis and proceed with the "alternative hypothesis." The natural alternative to the null hypothesis is: diminished value exists and the diminished value increases with increasing damage to a vehicle.

4.   In order to estimate diminished value, some kind of quantitative model is needed. In a heuristic format a simple model is the following, equation (1): Price = (Effect of damage) + (Effect of car characteristics). The "car characteristics" in Equation (1) are the control variables such as make, model, age, mileage, etc. If there is no effect of damage on price, then there is no need to include the damage variables in Equation (1), and without any loss it can be re-written (Equation (2)) as Price = (Effect of car characteristics).

5.   Examining the role of damage can be done by comparing models (1) and (2), with and without damage variables, respectively. That is what we will do. We shall try two forms of modeling. Linear regression is an omnibus method for investigating the role of some variables on an outcome while controlling for others. We will use various diagnostic methods to determine if the model is appropriate for the data being considered. The regression model generally takes the form

$$Y = B0 + B1^*X1 \ldots Bk^*Xk + e = E \qquad\qquad \text{(Equation 3)}$$

where Y is the sales price in some form, such as log (SP) or log (SP/BB—log of the ratio of sales price to Blue-Book value), X1, ..., Xk are the predictor variables, such as damage variables and control variables, and *e* is an error term, or noise. Rarely does a regression equation predict the outcome exactly, so the error term is the "noise": the observed value minus the model-predicted value. The coefficients, such as in Equation (3), show the impact of each variable on sales price. In a simplified sense if the coefficient is relatively large, then the variable it multiplies has a big impact on the outcome, and if it is small, there is little impact, perhaps even zero impact if the coefficient is zero.

6.   The variables in the model can be tested for their impact on sales price, and that is what we shall do. We shall have models with and without damage variables to determine if the damage variables make a difference. We will attempt to answer two questions: 1) does including the damage variables in the equation get us closer to the observed sales price? And, 2) when the damage variables are included in the model, what is their impact on price?

7.   At this point we plan to use all of the control variables in the model and all of the damage variables from the auto auction survey or else new damage variables, such as the count of damaged locations. The fitted model can be used to estimate diminished value.

8.   A second method of model-building will be explored, if needed: classification and regression trees (CART). This tree-based method is useful when a linear regression model (such as Equation (3), above), does not work well. While we do not anticipate a need for it, CART is available.

4

9.   I would like to reiterate that this is our planned approach. However, through the progression of the case, and as additional facts are discovered, the diminished value modeling process may change as needed. The primary point of explaining how I plan to proceed at this juncture is to point out that such analysis is certainly possible given the dataset available. And, a competent statistician, Dr. Siskin, has walked this road before (model development), and his work has been accepted by the courts. I will further address the issue of potential errors contained in the dataset further in this response.

10.   Progressive is charging that because I have not seen their listing of cars and some of their characteristics, because I have not seen their specific insurance files, I am unable to assert that I will be able to estimate class-wide damages and individual damages. But the work to be done in this case is a well-established statistical endeavor: statistically predicting an outcome based on a relevant dataset. Progressive insured vehicles are cars (as opposed to, say, refrigerators or telephones or boats) purchased within the last decade or so in the United States. The data collected in the auto auction survey is also about cars purchased within the last decade or so (previous to the auto auction survey) in the United States. Both sets cover a broad range of vehicle types, models, makes and mileages (we expect that that diversity will be true of the Progressive class cars). Accordingly, the principles of damage and their impact on sales price and any statistical models describing the same will carry over from the auction dataset to the Progressive cars.

11.   The ability to apply the model to Progressive's data would then be based on the damage that occurred to each of the insured's vehicles. Progressive may be concerned that they will not have data items (variables) similar to those collected in the auto

auction survey. We do know that Dr. Siskin has previously carried out a successful exercise of using insurance company files to obtain variables needed for his model. Presumably Progressive, like other insurance companies, collects that information in the course of resolving a claim. It appears that insurance companies collect damage information (and car characteristics) for their own purposes related to issuing policies and handling claims. The fact that Dr. Siskin was able to collect that information in past cases where this dataset was accepted, and use that insurance-derived data to estimate class damages, makes it highly likely that the same will be possible using data provided by Progressive. If it should happen that some information used in our modeling is not available from the Progressive files, we would develop a model (using the auto auction data) based on variables that are available from the Progressive claim files. That model would then be applied to the Progressive class of cars to estimate class damages. However, it seems exceedingly unlikely that an insurance company that must make payments according to the extent of damage and the value of cars will not have information documenting the extent of damage and the value of each car.

12.   I will expand on my statement above that a statistical model developed from the auto auction survey can be applied to any related sample of vehicles. The auto auction survey and the subsequent analysis by Dr. Siskin (which, again, we refer to as evidence of capacity to analyze and prepare models but will not necessarily be the model which Dr. Polissar will develop and rely on) included a wide variety of vehicles both in terms of price and in terms of make, model, mileage and age.

13.   Moreover, the auto auction and the Progressive insured vehicles are all samples from a universe of cars bought and sold in the United States. This is the relevant

population. Those vehicles have both a pre-accident value and a post-accident value at any given moment, as explained here.

14.   Consider this population further: all cars in the USA and their diminished value at each moment in time (such as a particular calendar day). For a particular day under consideration, there will be two groups of cars: those that are in an accident on that day (and are subject, then, to a diminished value) and those that do not have an accident on that day. Any car that has not been damaged in an accident on the given day will not suffer the potential diminished value from before to after that day. The diminished value for a car that has not suffered an accident on the noted day is $0 (zero). But in the case of a car with an accident on that day there would be a paired pre-accident and post-accident sales value under the scenario that the post-accident damaged car is properly repaired. Typically the post-accident (post-repair) value would be less than the pre-accident value, and the difference in sales value would be the diminished value.

15.   Thus, there is a wide and diverse population that was used to provide a sample (the auto auction survey) for developing a model for diminished value. The cars in the Progressive class-action lawsuit are also part of that population. Because of the breadth of the sample of cars at the auctions, Progressive's class of cars can be reasonably expected to experience the same relationship between damage and price change. True, the Progressive cars came on the market more recently than those in the auto auction survey, but the statistical phenomenon at work in this case, namely the impact of damage on sales value, should carry over from one part of the population to the other. We are referring to the percentage impact of damage on sales value and not to the dollar impact.

16.   Progressive has not presented any evidence that the particular class of cars which are part of this lawsuit will differ from those evaluated in the auto auction survey as to the impact of damage on percentage change in sales value. They have provided some speculations, but nothing concrete. On the contrary, our data shows that even within the diverse sample of cars included in the auction survey, for example, the older cars and the newer cars show no evidence that their age changes the way in which damage impacts the sales value of the car. Dr. Siskin, in his model development (which passed the various challenges in court), did not find that the percentage impact of damage depended on car characteristics—even in this quite diverse sample. Why, then, when the percentage impact of damage did not change with age, mileage, Blue Book value and other characteristics, should we expect it to change with calendar year of manufacture? Thus, the Progressive collection of cars is a "familiar" collection in the sense that the vehicles are all cars purchased and owned in the United States and can be expected to have a diminished value impact from damage that is consistent with the cars studied in the auto auction survey, when the damage impact is presented as a percentage.

17.   As a second point and as presented in our analysis plan we will attempt to validate the diminished value model created from the auto auction survey data by comparing diminished value estimates from the model with the diminished value payments for a sample of cars for which Progressive has made such payments. Progressive has supplied a sample of claim files where diminished value has been assessed and compensated by the company, and a larger sample is expected if class certification is completed. We do expect a positive correlation between our diminished

value estimates from our modeling and the amounts paid by Progressive to settle diminished value claims. A positive correlation would be evidence in support of the diminished value modeling and estimation process.

18.   Presumably, the diminished value payments made by Progressive are higher in cases where a car has been highly damaged and repaired, rather than lightly damaged and repaired. I do not think that Progressive (or any insurance company) will claim that their own payments for diminished value bear no relationship to damage and to the age, mileage and other car characteristics such as the undamaged sales price of a car. The buyers and sellers at an auction are doing assessments that parallel those of the insurers. Thus, the sales at the auto auction really parallel the insurance diminished value process. The modeling process is simply allowing the observed data to speak up and show what damage does to sales price. Additionally, the model developed by Dr. Siskin (which, again, we do not expect to rely on in form but do rely on as evidence that a model can be created) shows clearly that the diminished value is directly and plausibly related to the extent of damage. These are not guessed-at formulae. They are based on the reality of damage and sales price observed in the auto auction survey. Thus, we expect (and it is common sense) that in the Progressive class the more heavily damaged and subsequently properly repaired cars would show a greater percentage diminished value than more lightly damaged cars. This is exactly Dr. Siskin's finding from the auto auction survey. This is something we also expect our own modeling process to show.

19.   Thus, though we have not seen the Progressive data in advance, we presume that as the case progresses and additional data and documents are provided by

Progressive, we will be able to carry out a validation exercise and also apply our diminished value model to estimate the loss for the class and for individual cars.

20.   To better understand how models based on sampling can be applied to other samples, consider the weather phenomenon.   Weather prediction models are developed on the past weather experience of a country, a region or of the world. These models are then used to estimate future weather conditions such as hurricanes, rain, sunny weather, and so on. The weather forecast is not perfect but it is good enough that people pay close attention to these forecasts, and they are included as a major part of the broadcast news. The weather prediction model cannot be built uniquely on those specific events that are going to occur, as they have not occurred yet. But weather forecasting generally works because embedded within the prediction modeling are past weather cases that are analogous to the weather that is going to be predicted.

21.   Similarly in terms of level of damage, age of car, mileage, and other characteristics, the Progressive class can be expected to include members that overlap considerably the auto auction survey in terms of level of damage, age, mileage, and so on. Therefore it is to be expected that the model developed on the auto auction survey will very adequately cover the cars in the Progressive class. We do not expect the Progressive class to be exactly the same as the auto auction survey but we expect that there will be sufficient overlap that the model developed on the auto auction survey in terms of percent reduction in sales price in relation to damage and car characteristics can be applied to the Progressive class.   Progressive has not produced a counter example to the Siskin diminished value model—a counter example that would provide a reason for questioning the validity of the model.

22.   Progressive quotes extensively from my deposition, where I acknowledge that the Progressive cars are younger in terms of the year they were made or manufactured than those included in the auto auction survey. This is undoubtedly true and so I was correct in saying that the year of the auction vehicles is not representative of the year of manufacture of the Progressive class. However, this is an unimportant characteristic.

23.   As stated above, the damage and the impact of damage can be expected to be representative of the Progressive class.   Both the Progressive class and the cars surveyed at auto auctions included cars that were damaged and properly repaired (the auction sample) or damaged and potentially or actually properly repaired (the Progressive class). The factors and market forces that enhance or decrease the value of a car in relation to damage, as well as other characteristics, are operating in both instances to enhance or decrease the value of a car. The actual or potential buyers and sellers are each trying to optimize their gain. Progressive has not provided anything other than an assertion that the auction sample and the class action cars will have a different percentage impact of damage on price. We have also noted previously in this document that we will be attempting to validate our model against Progressive diminished value payments.

24.   With respect to differences in the age, class, make and model of the vehicles in the survey and Progressive's claimants, we have largely addressed this point previously, but to reiterate, the model developed based on the auto auction survey can be applied to each car insured by Progressive. These cars in the Progressive class will overlap in terms of age, class, make and model and percentage impact of diminished value to those in the auto auction survey. We can readily apply the model developed

11

from a sample from the population to other parts of the population, such as the Progressive claims.

25.   It is within the realm of possibility that we will find some important difference between the Progressive class vehicles and those studied in the auto auction survey—a difference in the relationship of damage to sales price. If that occurs, we will certainly address that issue. But without some sort of data or peer-reviewed article it is sheer speculation that the 2010 damage scenarios and diminished value will differ from those in 2000 in terms of percentage loss.

26.   Progressive claims that I do not know the contents of the Siskin Data. That statement is simply untrue. We have extensive familiarity with the items in the auto auction survey data collection and continue to become more familiar through our fact-finding process. Since the time of my deposition, we have performed interviews or depositions with key players in the survey, including Dr. Siskin, his associate Dr. Will Guild, and Dr. Susanne Shay. Dr. Shay oversaw the collection of Blue Book information.

27.   The history of this dataset in the courts has also provided confidence for us that the contents of the dataset will be meaningful when we do launch our formal model-building activity. We are aware that these data have been challenged and have survived challenge many times; that they have been used to create a statistical model that was accepted by the courts; that they have been used to estimate total class damage in previous class action cases; and that these estimates have been accepted. We do know a lot about the history of these data.

28.   In addition we are in possession of the template for forms filled out by the inspectors who carried out the survey, and we have the protocol of 24 steps followed by

the inspectors who collected the data. This information has likewise been produced to Progressive's counsel.

29.   With respect to the specific assertions made by the Defendant in the Motion:

- The data dictionary (titled: "data dictionary 122010.xls") was provided to the defense on via an e-mail to Matt Donohue on Dec. 1, 2010 at his request.

- Information on how Blue Book variables were collected is contained in our notes from a discussion with Dr. Shay (after my Progressive deposition). As noted therein, Dr. Siskin gave Dr. Shay a list of cars—make, model, year, some information on short-beds or long-beds, and possibly other options that are included to index individual Blue Book values. Using Kelley Blue Books purchased at that time, Dr. Shay looked up the make, model, year, as well as any details related to options that appeared in the main Blue Book listings (i.e., the options appeared in the car-by-car listings and not in a look-up table of price adjustments for options).   She would then compare the VIN segment (the first four digits of the VIN) between the Blue Book listing and the VIN number she from the auction survey to ensure that it was the same car. Dr. Shay then entered the last two columns of the Blue Book price at the time, which were the retail and wholesale values for the car.

- Dr. Shay did not account for value changes based on the mileage and options tables listed for all cars at the beginning of the Kelley Blue Book, and this is perhaps why the Defendant considers some of the Blue Book values in the auction dataset as "erroneous," though they are not. We understand that the Blue Book values of the auction vehicles were faithfully transcribed from the

appropriate entries in the Kelley Blue Book into the auction dataset without adjustments from look-up tables for mileage and options. As noted elsewhere in this document, the positive and negative additions to Blue Book value resulting from presence or absence of equipment and trim options and high or low mileage for a given car may increase imprecision in the modeling effort (probably only slightly), but they do not bias the diminished value estimates.

- Dr. Shay did account for any of the value additions or subtractions from options when the options were part of the description of the vehicle in the main (longest) section of the Kelley Blue Book. In cases where data was missing, she did not enter the values, noting in her interview: "I'm not going to put in something deliberately wrong."

- Concerning the "Class" variable, this may, indeed, need some adaptation to the modern setting since it is defined partly by example, but we have not determined whether or not we will use this class variable and update it—if updating is needed—for the Progressive vehicles.

30.   My expert work on this case is not carried out alone. Trying to suggest that I do not know the dataset based on asking questions of variable names in a deposition without immediate access to the people and resources I work with does not prove that I am unable to knowledgeably work with the data. I have able teammates who are working with me, and one of my associates is certainly more familiar with the "nicknames" (variable names) that are used in the dataset. Defendant asked me in deposition about the specific variable names. Our team does know about these variables in the sense of having both resources and teammates

who are very familiar with the specifics of these variables. Further, I am familiar with the data collection form and its sections on damages and on car characteristics, and the data from these forms is what has been converted to the information in the dataset. One of my associates is readily able to convert our discussions about analysis in terms of damage and characteristics into the specific variables in the dataset. Progressive attorneys did not inquire about that during the deposition or afterward.

31.   For the record, the following is the definition of variables noted by Progressive (on page 10, lines 4 and 5 of their motion) as, allegedly, variables that I do not know. The variable name cited by Progressive is followed by its definition (and comments.)

- NORPTDAM: This is an indicator (true vs. false) of no reported damage. This information was filled in on the second page of the survey form, the last item in Inspection step #3. This survey items reads as follows: "Check if there is no reported damage and no evidence of repair and end inspection." There is a check box next to this sentence.

- FRDAMG: This is an indicator (true vs. false) of frame damage on windshield or frame damage on report, reported in listing or repair on frame. This variable was derived from the entries to the survey and from the auction listing and it means a positive response to: either 1) frame damage reported on windshield (page 1, Inspection Step #2), 2) frame damage reported on auction listing, or 3) any frame repair indicated in inspection step #4 (location code 20).

- LDOR: This is an indicator (true vs. false) of any left door repair indicated in inspection step #4 (location code 4)

- GLASS: This is an indicator (true vs. false) of glass replacement need. It is a carbon copy of another variable GLSSREPL which was collected from the "Is glass replacement necessary?" question on page 2, Inspection Step #2 of the survey form. On the form there were two check boxes, "Yes" and "No" next to the question that were used for the answer.

- PANEL: This is an indicator (true vs. false) of any left or right quarter/sail panel repair indicated in inspection step #4 (location codes 6 and 9).

- FRDANG: There is no variable FRDANG. What is meant is probably the variable FRDAMG that was described above.

- FRAM: There is no variable FRAM. What is probably meant is either the variable "FRME" or "FRM". The first indicates (true vs. false) repair of frame in Inspection Step #4 (location code 20) and the second indicates the number of repairs marked under location code 20 in Inspection Step #4.

- DAY: We are not certain what this variable is and, currently, do not plan to use this variable. This variable does not seem to relate to any item on the survey form. This variable was present in Dr. Hall's file ("auction_inspections_data_final1.sas7bdat") but is not present in the data from Dr. Siskin that we plan to use.

- Random_ID: We are not certain what this variable is and, currently, do not plan to use this variable. This variable does not seem to relate to any item on the survey form. This variable was present in Dr. Hall's file

("auction_inspections_data_final1.sas7bdat") but is not present in the data from Dr. Siskin that we plan to use.

33.   That there would be some errors in the data is not surprising at all. Any dataset of substantial size is going to include errors. They are inevitable in a large survey dataset, even after very careful work. A dataset is not invalid if it has errors; it becomes invalid if the level of errors or the frequency of errors is so great that the data itself cannot be considered reliable overall.

34.   In this case, there were a limited number of corrections and changes to data and these have been incorporated and were reviewed and covered in previous depositions by Dr. Siskin. As an example of the limited nature of the changes or corrections to the dataset, we can consider Dr. Siskin's SPSS (statistical application) code used for creating his model (Exhibit 7 of his December 12 2003 deposition.) In addition to SPSS computer code to make calculations for a specific sales price model, this computer code (Exhibit 7) implemented some changes to the data prior to the analysis (but did not change the original data file that was the input for the analysis.)   There were the following changes to the data: 48 changes to the blue book value, one change to VIN8, one change to make/model and one change to mileage. We think that some of the allegations of error from Progressive have not considered the SPSS code that carried out corrections.

35.   Defendant is also ignoring the fact that any alleged errors detected have been either corrected or have been found not to be errors. If the defendant reviews prior depositions and challenges to the dataset in the case cited above (*Sims v. Allstate),* the issue of errors is more fully addressed.   Needless to say previous defendant

17

representatives in earlier class actions have very thoroughly checked and challenged the data. The data that we have now has passed many tests.

36.   I would also point out that Defendant has made no statement about the number of errors or percentage of data items out of the dataset that it alleges have been affected by errors. Indeed, it seems to be the case that errors are rare and unlikely to impact the data.

37.   From the SPSS programs of Dr. Siskin and from deposition and from the challenges to the data (particularly by defendant Allstate expert Dr. Robert Hall) we know that there have not been a large number of errors or data items affected. It is a small fraction. Further, Dr. Siskin reported in his Feb. 21, 2011 interview (these notes were provided to Progressive) that when he ran his models with alternative datasets that differed in specifications for "erroneous" vehicles it made very little difference in the diminished value estimates. (Dr. Siskin also stated that he ran his model without the data collected by Darrell Harber, an inspector who we will discuss in further detail later, and again it had no substantial impact on the outcome.)

38.   As to the survey itself, I would point out that it was designed and carried out by a reputable survey research firm led by Dr. Will Guild, a man with extensive experience in creating and leading such studies.

39.   Defendant notes that the data collection forms have been destroyed and cannot be compared to the current data. That is true. Nevertheless we know and can rely on the process of conversion of those data to electronic format, as follows. The data were key entered by Dr. Guild's associates and the screens for key entry were created to appear like the data collection forms (see Guild Deposition, p. 94). A substantial

fraction—30%—of the data were checked against the original data collection forms (see Guild Deposition, pp. 62, 121.) The key entry was carried out directly from the forms with little or no interpretation except possibly of handwriting. Dr. Siskin has supplied the file that he relied on in the Allstate case. Thus, we have a vetted data file confirmed by the person in charge of data collection. We also have the 24-step inspection protocol, titled "InspectorInstructionForm," along with additional instructions to the inspectors titled "GuildGroupProtocolAndDataSheet" and provided it to Defense counsel. That data collection form is very specific in how the inspector should conduct the survey of vehicles, and we know from the deposition of Dr. Guild that the work of the inspectors was monitored by Dr. Guild and his associate Robert Guild (See Guild Deposition, pp. 57-59, 145, 156, 165).

40.   Progressive asserts that: "Polissar mistakenly believed that the inspectors collecting information for the Siskin Data followed a written protocol, and were not told the purpose of the study in order to prevent judgment bias in detecting and rating the cars." Based on the multiple depositions and interviews, I am confident in saying that it is Progressive that is mistaken on this matter. After reviewing depositions of Dr. Siskin and Dr. Guild, as well as separately interviewing Dr. Siskin, we understand that the training and development of the protocol occurred as follows: With respect to whether or not the inspectors knew the purpose of the survey, Dr. Siskin stated that "...we never told them the purpose of the study. I never—and I went out of the way never to explain how the study was going to be done, what I was doing with the data. What I did testify to was, as anybody involved in this, it's not unreasonable to believe that somebody would interpret that they were looking at the question of diminished value as part of a lawsuit.

.... I think that's irrelevant because I don't think any of these inspectors would understand how they could get the sponsors' – sponsors' interests fulfilled. They wouldn't know what the right answer was because they don't understand the type of study that I was doing...." [Dr. Siskin deposition dated 4/2/2004, p. 134-135.] Dr. Guild also noted in his deposition that the inspectors are not statisticians, and so they would not know how to "skew" the results [Guild deposition, p. 49-50, p. 90].

41.   Even though the inspectors were not told what the purpose of the survey was they would very likely guess that it had something to do with damage of cars. It is possible that the inspectors would even have guessed that the survey had something to do with insurance.   Nevertheless, the inspectors were supervised and told to be as accurate as possible by Drs. Siskin and Guild. Additionally, as Dr. Guild observed, the use of the data was being collected to develop complex statistical models whose specification could not be known in advance. Nor would the inspectors have known about the process of fitting the model and how it would be used in the estimation of damage for class vehicles. In addition, the inspectors could not know the sales price of cars in advance; the sales price was gathered in a separate operation after inspection and could not be affected by the inspectors. Thus, the charge that the inspectors knew the purpose of the survey is moot. What would they do with that information if they actually did know it?

42.   Progressive relies heavily on the deposition testimony of Darrell Harber, But Mr. Harber was merely an inspector—he was not involved in the creation, development, or management of the auction survey. At one point in his Dec. 1, 2010 deposition, the questioning attorney listed several inspectors for Mr. Harber, who had almost no

memory of most of them. (Harber Deposition, p. 117). Progressive should also note that Mr. Harber himself referred to his lack of memory about the survey saying: "I mean, we're going back, you know, ten years ago. Sometimes I have a hard time remembering what I had for lunch yesterday." (Harber Deposition, p. 132). Additionally, as noted above, Mr. Harber's testimony with respect to the training and protocol is contradicted by both Dr. Guild and Dr. Siskin who created and oversaw the conduct of the auto auction survey. Again we note that Dr. Siskin's analysis carried out with and without the vehicles inspected by Mr. Harber gave very similar results on damage impact on sales price.

43.   Progressive argues that I have not created any model to show how I would calculate diminished value. This has been answered extensively above, but to reiterate: First we plan to develop a diminished value model, as described above. But we would also point out that a diminished value model based on linear regression was previously established by Dr. Siskin. Given the fact that a competent statistician has previously developed a model that has been accepted we do have to have confidence that our own model will be successful.   Linear regression is a widely used method of statistical modeling and is accepted by statisticians and scientists for use in studies with data and a study design similar to the present case. In addition to the linear regression model described above, we may end up using an alternative statistical method, CART.

44.   Progressive argues that I cannot explain the variables in my preliminary analysis. The issue of the variables has largely been addressed above. And, I have supplied the preliminary analysis that I carried out. As noted, I know the contents of the data collection form and I know those have been converted into the dataset and I and one of

my associates is very familiar with which items in the dataset go with which items in the data collection form. Accordingly, I am able to refer to the data collection form items and their corresponding variables in performing my analysis.

45.   Progressive argues that I cannot build a reliable model from the Siskin Data because I do not have complete information. Defendant notes, correctly, that my opinion is tied to the information that is in the Siskin dataset. And, indeed, there is information that was not collected that could supply a more accurate estimate of the market price of a specified individual vehicle before an accident. That said, we do have the major determinants of price, such as make, model, age, mileage and Blue Book value and other potentially useful items, such as class. All of these items were collected as part of the auto auction survey or were derived from survey data and are included in the auction dataset. These are also items which we expect will be available with respect to Progressive's class action claimants. Thus, the value of the vehicles can be determined with some level of precision. That level of precision is yet to be determined, but it is likely to be very much better than random and will well serve the purpose of estimating total class damages and should be helpful in specifying the diminished value for individual cars.

46.   These data items just mentioned are so effective in estimating the sales price of a car, that when used in modeling they account for over 90% of the variation in the price (expressed on the logarithmic scale that will be used in modeling). We do not claim that the diminished value estimate for a car from our model would be the most accurate possible for each specific car. However, we do claim that it will be reasonably determinative of the price of the car and of the diminished value of the car. Additionally,

22

I would point out that our modeling and diminished value estimates do not need to be based on every last variable that can have an impact on the sales price of a car. We need variables that are quite predictive of sales price and we need variables that are related to *both* damage and sales price. We have that. Options such as air conditioning and trim will only be relevant now if air conditioning (or trim) makes a car substantially more or less likely to be in an accident (and be damaged). There is no evidence that omitted items, such as air conditioning and trim and other options, have any substantial impact on diminished value. They probably do have some impact on sales price, and omission of them will lead to some imprecision (but not bias) in estimation of sales price and diminished value.

47.   Defendant may be able to find hand-selected examples where this car or that had a sales price or diminished value whose model-based estimate could be bettered in some way, but we hope that they will not burden the scientific process with hand-picked examples. We would be eager to see any studies of a scientific nature that bear on the topic at hand and deal with our data or with equally useful data.

48.   Progressive argues that I have no methodology to calculate individual damages. To reiterate, the linear regression framework provides a methodology for both estimation of individual and class average damages. (The CART approach that has been mentioned can also be used to estimate class and individual damages.) The linear regression modeling approach was mentioned in my original submission dated Nov. 19, 2010. It is standard in regression analysis to be able to estimate individual values and we can average these across a sample from the class to get an average diminished value which can be multiplied by the number of vehicles in the class to obtain total class

damages. A margin-of-error for the class total damages can be readily obtained, as well.
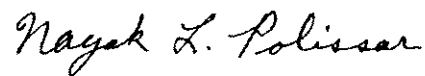
49.   Thus, both individual diminished value estimates as well as overall class damages can be obtained from the regression framework. Linear regression methodology includes very standard techniques for estimating individual values—in our case it would be estimates of sales price for individual cars.

50.   The diminished value for an individual vehicle will be determined as follows. The model developed from the auction survey will be used to initially estimate the sales price for a vehicle, using the damage information as observed in the insurer's files. The car damage information and non-damage car characteristics are "plugged in" to the model to yield the estimated sales price, given the damage and proper repair. The (hypothetical) "undamaged" sales price will next be estimated by setting the damage of the car to zero—undamaged, and "plugging in" the zero damage information along with the other car characteristics, yielding an estimate of the pre-damage sales price of the car. The ratio of the damaged sales price to the undamaged sales price is the fractional value remaining in the car after the damage and proper repair. If this ratio is 1.0, the car has lost no value; if the ratio is 0.9, the car has retained 90% of its value and has lost 10% of its value. Thus, the estimated fractional loss in value can be estimated for each and every car. This fractional reduction for a car can be multiplied by an appropriate Blue Book value for the car or by an insurance companies accepted pre-accident valuation of the car or by another accepted pre-accident valuation to yield the dollar diminished value.

24

51.   So while the initial purpose of the diminished value modeling will be to obtain a total class damage estimate, the modeling can also be successfully used for allocation of damages to individual claimants.

52.   In conclusion, all of Defendant's points are based on incomplete information, a lack of understanding of the process of statistical model building, or overstatement of the impact of the few errors in the dataset or on other items that have little to no effect on the estimation process. The opening item, that the vehicles in the class are not the same as the vehicles in the auction survey does not apply, since the auction survey is intended as a sample of the impact of damage and proper repair of a vehicle on price, drawing from a large population that includes the auction survey vehicles and the Progressive class vehicles.

EXECUTED THIS 18th DAY OF APRIL, 2011

Nayak L. Polissar
_____

NAYAK L. POLISSAR, Ph.D.